Wisconsin Knife Works, Inc.

SAFETY DATA SHEET

Revised: March 2021

Section 1: Identification:

Company Address: 2505 Kennedy Drive, Beloit WI 53511-6903

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Chemical Name: Cemented Carbide Product with Cobalt or Nickel Binder.

Trade Name and Synonyms: Bak Pak, Euro Bak Pak, Carbide Router Bit Tips, Carbide Inlayed Knives, Tips for Finger Joint Cutters.

Chemical Family: Refractory Metal Carbide.

Molecular Weight: N/A Refractory Metal Carbide.

Section 2: Hazards Identifications

2.1 Symbol

Signal Word: Warning.

Hazard Statement: May be harmful in contact with eyes or skin, if inhaled, or swallowed.

Emergency Overview: Sintered Tungsten Carbide with Cobalt and/or Nickel Binder is a dark gray metal with no odor. During normal operation and usage, cemented carbide products do not present inhalation or ingestion hazards. However, grinding cemented carbide products will produce dusts of potentially hazardous ingredients which can be ingested, inhaled or come into contact with the skin and eyes.

2.2 OSHA Regulatory Status

Dusts and mists generated during grinding of this material are considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

2.3 Potential Health Effects

Eye Contact: May cause eye irritation.

Skin Contact: May cause skin irritation or allergic skin rash.

Inhalation: May cause irritation of the upper respiratory system.

Ingestions: May cause systemic effects.

Chronic Effects: Carbon black, metallic cobalt, and metallic nickel are listed as IARC Group 2B (possibly carcinogenic to humans). Metallic chromium is listed as an IARC Group 3 (not classifiable).

2.4 Potential Environmental Effects

No data available at this time.

Section 3: Composition/Information on Ingredients

Tungsten Carbide: CAS# 12070-12-1 (limit for insoluble tungsten) 70-97%

Cobalt: CAS# 7440-48-4 (cobalt and special binder grades only) 3-30%

Nickel: CAS# 7440-02-0 (nickel and special binder grades only) 6-15%

Tantalum Carbide: CAS# 12070-06-3 (limits for tantalum dust) 0-3%

Niobium: CAS# 7440-03-1 (grades with tantalum carbide) 0.2-2.2%

Carbon: CAS# 1333-86-4 (limit for carbon black) 4-6%

Chromium Carbide: CAS# 12012-35-0 (special binder grades only) 0.75-1.25%

Molybdenum: CAS# 7439-98-7 (VM-Z101, Z02) 0.00-0.20%

Section 4: First Aid Measures

If overexposure to dusts and mists from grinding occurs, have SDS and label information available and contact a poison control center or seek medical attention immediately.

4.1 First Aid Procedures

Eye contact: Flush eyes immediately with large amounts of water, occasionally lifting upper and lower lids, until no evidence of chemical remains (at least 15 to 20 minutes). If irritation persists, seek medical attention.

Inhalation: If symptoms of pulmonary involvement develop (i.e., coughing, wheezing, shortness of breath), remove from exposure and seek medical attention.

Ingestion: If substantial quantities are swallowed, dilute with a large amount of water, induce vomiting, and seek medical attention.

4.2 Note to Physicians

Medical conditions aggravated by long term exposure include chronic pulmonary, upper respiratory tract and skin disorders.

Target Organs: Respiratory system, skin, bladder, kidneys and eyes.

Primary Routes of Entry: Skin contact, eye contact, inhalation, ingestion.

Section 5: Fire Fighting Measures

5.1 Flammable Properties

Hard cemented carbides are not a fire hazard, however dusts and mists generated in grinding operations may present a fire or explosion hazard when exposed to high temperatures or ignition sources. Particle size and dispersion in air determine reactivity. However, this is not expected to be a problem under normal handling conditions.

Flash Point: None.

Auto-Ignition: Not applicable.

Lower Flammable Limit (LFL): Not applicable.

Upper Flammable Limit (UFL): Not applicable.

5.2 Extinguishing Media

5.2.1 Suitable Extinguishing Media

Remove oxygen by sealing container or by smothering with dry sand, dry dolomite, or powdered sodium chloride; use an ABC type fire extinguisher or flood with water. Move container from fire area if possible.

For massive fire in cargo area, use unmanned hose holder or monitor nozzles, or else withdraw and let fire burn out.

5.2.2 Unsuitable Extinguishing Media

Not Applicable.

5.3 Protection of Firefighters

5.3.1 Specific Hazards Arising from Chemicals

May generate toxic metal fumes when heated.

5.3.2 Protective Equipment and Precautions for Firefighters

For a fire contained to a small area, use a respirator approved for toxic dust and fumes. For a large fire, firefighters should use self-contained breathing apparatus.

Section 6: Accidental Release Measures

6.1 Personal Precautions

If airborne dust is present, use personal protection recommended in section 8.

6.2 Environmental Precautions

Material is not hazardous to the environment.

6.3 Methods for Containment

Not applicable.

6.4 Methods for Clean-Up

Clean up using methods that avoid dust generation such as a vacuum with a HEPA filter, wet mop, or wipe. Place in suitable clean, dry container for later disposal or reclamation.

6.5 Other Information

Not Applicable.

Section 7: Handling and Storage

7.1 Handling

Avoid dispersion of grinding dust and mist into the air. Do not breathe dust. Avoid contact with skin, eyes or clothing. Wash hands thoroughly after handling, before eating or smoking. Do not shake clothing, rags or other items to remove dust. Dust should be removed by washing or vacuuming.

7.2 Storage

Material should be stored in a clean, cool area. Keep away from sparks and ignition sources.

Section 8: Handling and storage

8.1 Exposure Guidelines

Chemical name OSHA PEL (1) ACGIH TLV (2)

Tungsten Carbide: (limit for insoluble tungsten) None established 5 mg/m3

Cobalt: (cobalt binder grades only) 0.1 mg/m3 (dust and fume) 0.02 mg/m3

Nickel: (nickel binder grades only) 1 mg/m3 1.5 mg/m3 (inhalable)

Tantalum Carbide: (limits for tantalum dust) 5 mg/m3 5 mg/m3

Niobium: (grades with tantalum carbide) None established

Carbon: (limit for carbon black) 3.5 mg/m3 3.5 mg/m3

Chromium Carbide: (VM-S101, S102, S103) 1 mg/m3 0.5 mg/m3

Molybdenum: (VM-Z101, Z02) 15 mg/m3 (vacated) 10 mg/m3 (inhalable) 3 mg/m3 (respirable fraction)

(1) The OSHA PEL is the employee's time weighted average exposure in any 8 hour work shift of a 40 hour week which may not be exceeded.

(2) The ACGHIH TLV is the time-weighted concentration for an 8 hour workday in a 40 hour week to which nearly all workers may be repeatedly exposed with an adverse effect.

8.2 Engineering Controls

Use local exhaust ventilation that is adequate to limit personal exposure to airborne dust to levels that do not exceed the PEL or TLV. If such equipment is not available, use respirators as specified in 8.3.3

8.3 Personal Protective Equipment

8.3.1 Eye/Face Protection

Safety glasses with side shields are recommended.

8.3.2 Skin Protection

Protective gloves are recommended when contact with dust or mist is likely. Prior to donning gloves, wash hands thoroughly.

8.3.3 Respiratory Protection

Use an appropriate NIOSH approved respirator when airborne dust concentrations exceed the appropriate PEL or TLV. All applicable requirements set forth in 29 CFG 1910.134 should be met.

8.3.4 General Hygiene Considerations

Avoid breathing dust. Avoid contact with skin, eyes and clothing. Wash hand thoroughly after handling and before eating or smoking.

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Section 9: Physical and Chemical Properties

Appearance and Odor: Dark gray metal and no odor.

Solubility in water: Insoluble.

Physical state: Solid freezing.

Melting point: Not available.

Boiling point: Not applicable.

pH: Not applicable.

Specific gravity: 11.0-15.5

Molecular weight: Not determined.

Vapor pressure: Not applicable.

Vapor density: Not applicable.

Evaporation rate: Not applicable.

Section 10: Stability and Reactivity

10.1 Chemical Stability

Stable under normal conditions of temperature and pressure.

10.2 Conditions to Avoid

Not applicable.

10.3 Incompatible Materials

Acids, strong oxidizers, fluorine gas (material ignites on contact with fluorine gas).

10.4 Hazardous Decomposition Products

Not applicable.

10.5 Possibility of Hazardous Reactions

Will not occur under normal conditions.

Section 11: Toxicological Information

Eye contact: Can cause irritation or conjunctivitis.

Skin contact: Can cause irritation or allergic skin rash due to cobalt or nickel sensitization. Certain skin conditions, such as dry skin, may be aggravated by exposure.

Cobalt: Dusts or mists can cause irritation of the nose and throat. Inhalation can result in an allergic reaction in individuals previously sensitized, causing difficult breathing. Dusts or mists also have the potential for causing transient or permanent respiratory or pulmonary diseases, including occupational asthma, pulmonary fibrosis and interstitial pneumonitis in some individuals. It is reported that cobalt dust is the most probable cause of such respiratory diseases. Reports have also indicated a lack of correlation between the onset of symptoms, length of exposure, and the development of interstitial pneumonitis. Symptoms may include productive cough, wheezing, shortness of breath, chest tightness, dyspnea and retrosternal pain.

Nickel: Acute toxicity from nickel inhalation can cause headache, sore throat, and hoarseness. Nickel is also suspected of causing nasal and lung cancer. Symptoms may include pain, bleeding, nasal obstruction, vision impairment, weight loss and voice resonance change.

Ingestion: Ingestion of significant amounts of cobalt has the potential of causing blood, heart and other organ problems. Current scientific information indicates no adverse effects are likely from ingestion of small amounts of nickel dust generated from this product.

The LD50 for cobalt is 6.171 mg/kg (oral, rat). The LD50 for nickel is 5 g/kg (oral, rat).

Conditions Aggravated by Exposure: Lung and other pulmonary and skin conditions may be aggravated by exposure.

Carcinogenicity: Metallic cobalt, metallic nickel, and carbon black are listed as an IARC Group 2B (possibly carcinogenic to humans). Metallic nickel is also listed under NTP as reasonably expected to be a carcinogen. Metallic Chromium is listed as an IARC Group 3 (not classifiable).

Section 12: Ecological Information

No data available.

Section 13: Disposal Considerations

Disposal Instructions: May be sold as scrap or reclaim. Ensure disposal in compliance with all applicable federal, state, local and provincial regulations. Contact the manufacturer for additional information.

Hazardous waste code: The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residuals/unused products: Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. The material and its container must be disposed of in a safe manner.

Contaminated packaging: Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

Section 14: Transport Information

14.1 Basic Shipping Information

US Department of Transportation (49 CFR 171 to 180)

Hazardous Classification: Not applicable.

Proper Shipping Name: Not applicable.

Packing Group: None.

14.2 Additional Information

Labeling Requirements: Not applicable.

Section 15: Regulatory Information

OSHA 26 CFR 1910.1200: Covered under OSHA “Hazard Communication” standard.

Toxic Substances Control Act: All components are on the TSCA inventory.

CERCLA 40 CFR 302: Reportable quantity is one hundred pounds for nickel. There is no reportable quantity for cobalt.

SARA Title III: Hazard categories are chronic.

Section 16: Other Information

CERCLA Ratings (Scale 0-3): Health 0 Fire 0 Reactivity 0 Persistence 0

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Any comments or questions should be directed to:

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